

REMARKS

Claims 44 and 46-52 are pending in this application. By this Amendment, claim 44 is amended to even more clearly distinguish over the applied references and claim 52 is added. Support for the amendment to claim 44 can be found in the original application at, for example, page 152, line 5 through page 154, line 15. Support for claim 52 can be found in the original application at, for example, page 149, line 3 through page 152, line 10 and at page 154, lines 16-25. Thus, no new matter is added.

The courtesies extended to Applicant's representatives by Examiner Kumar at the interview held March 19 are appreciated. The reasons presented at the interview as warranting favorable action are incorporated into the remarks below, which constitute Applicant's record of the interview.

The Office Action rejects claims 44 and 46-51 under 35 U.S.C. §103(a) over Travis (U.S. Patent No. 5,132,839) in view of Hattori et al. (U.S. Patent No. 5,689,316) (Hattori) and further in view of Lo (U.S. Patent No. 6,108,029). The rejection is respectfully traversed.

I. Claim 44

As discussed at the interview and further explained below, the applied references fail to disclose or suggest a display that uses a scanning light to project a plurality of two-dimensional images pixel-by-pixel by cyclically projecting one pixel from each of the plurality of two-dimensional images before projecting another pixel from each of the plurality of two-dimensional images, as now recited in independent claim 44.

Travis fails to disclose or suggest the combination of features recited by independent claim 44. Travis fails to disclose or suggest a two-dimensional image forming means for forming a plurality of two-dimensional images by scanning light which has been subjected to time-modulation based on information on rearrangement of data of each pixel of the plurality of two-dimensional images, as recited by independent claim 44. The Office Action concedes

that Travis fails to disclose the time modulation. However, Travis further fails to disclose or suggest forming a plurality of two-dimensional image by scanning light to project images pixel-by-pixel. Although Travis uses a beam scanner 16, Travis discloses a system that relies on a different principle than claim 44. Travis discloses that the beam scanner directs a beam towards a single lens at a time in a lenticular array 3. The lens in lenticular array 3 then directs the light towards lens 1 from a specific angle, each lens in the array directing the light from a different angle. Lens 1 then directs the light through spatial light modulator 2, which Travis discloses as an liquid crystal display (LCD). The two dimensional images of Travis are formed on the spatial light modulator 2, and are not formed by the scanning light, as recited by independent claim 44. The light disclosed by Travis is merely used to provide back lighting for the spatial light modulator 2. See Travis, Fig. 6 and col. 8, line 63 through col. 9, line 54. The LCD of Travis displays all pixels of an image simultaneously. The backlight formed by the scanned beam of Travis also projects a plurality of pixels simultaneously. Thus, there is no pixel-by-pixel projection in Travis. Moreover, there is no "cyclically projecting one pixel from each of the plurality of two-dimensional images, before projecting another pixel from each of the plurality of two-dimensional images," as recited by claim 44.

Hattori fails to overcome the deficiencies of Travis. Hattori discloses an image forming apparatus that uses a light projecting means to backlight an apparatus with spectral light. Hattori fails to disclose a scanning light. Further, Hattori discloses a spatial modulating element 20, which is described as being a series of liquid crystal panels. The back light 10 is projected through the series of panels that comprise the spatial modulating element 20, and then through a condenser lens L1 and special filter 30 to be viewed via an imaging lens L2. Hattori's image is formed by the spatial light modulating element 20 that is back lit by the light projecting means 10. The LCD panels of spatial light modulating element 20 display the plurality of pixels forming the image to be displayed at any given time.

The spectral light is projected through all of the plurality of pixels simultaneously, and therefore, Hattori fails to disclose or suggest projecting "images pixel-by-pixel by cyclically projecting one pixel from each of the plurality of two-dimensional images, before projecting another pixel from each of the plurality of two-dimensional images," as recited by claim 44. Thus, Hattori fails overcome the deficiencies of Travis.

Lo also fails to overcome the deficiencies of Travis and Hattori. Lo discloses an apparatus that creates a back light through a large area illuminator 90. The light from element 90 passes through an LCD panel 40. The light then passes through display device 10 that directs a right view compared to a left view. Lo fails to disclose or suggest a scanning light, and therefore fails to disclose or suggest forming a plurality of two dimensional images with a scanning light, as recited by independent claim 44.

Furthermore, Lo projects the light from the large area illuminator 90 through linear regions and the plurality of pixels of LCD panel 40 and display device 10, respectively. Therefore, the light projects through all of the plurality of pixels from each two dimensional image angle formed on display device 10 at a single time. Thus, Lo fails to disclose or suggest projecting "images pixel-by-pixel bycyclically projecting one pixel from each of the plurality of two-dimensional images, before projecting another pixel from each of the plurality of two-dimensional images," as recited by claim 44. Thus, Lo fails overcome the deficiencies of Travis and Hattori.

The applied references, whether taken alone or in combination, fail to disclose the combination of features recited by independent claim 44. Therefore, claim 44 and its dependent claims, claims 46-48 and 51 are patentable over the applied references.

II. Claim 49

Regarding independent claim 49, as agreed upon at the personal interview, Travis, Hattori and Lo fail to disclose or suggest a three-dimensional image forming means that has a

region in which position information used for controlling the positions of incidence of the light emitted by the two-dimensional image forming means is recorded, as recited by independent claim 49. In rejecting claim 49 Office Action fails to indicate where any of the references disclose this feature. The applied references fail to disclose or suggest the claimed region in which position information is recorded.

The Office Action alleges that Travis discloses a three-dimensional image forming means that has a region in which synchronization information for synchronized control of the display as a whole is recorded. However, Travis fails to disclose such a feature. The sections of Travis cited by the Office Action merely disclose that the frame rate of the images must be at such a rate that the human eye does not recognize the change in frames. No position information is disclosed or suggested by Travis, or any of the references recorded in the claimed region of the three-dimensional image forming means.

Thus, as agreed upon at the interview, claim 49 is patentable over Travis, Hattori and Lo. Therefore, claim 49 and its dependent claims 50 and 52 are patentable over the applied references.

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of all pending claims are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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Attachment:

Petition for Extension of Time

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